

Application Serial No.: 09/970,939
Amendment dated February 20, 2004
Reply to Office Action dated August 20, 2003

IN THE CLAIMS

Please amend the claims as follows:

1. (Cancel)
2. (Currently Amended) A slider displacement direction conversion mechanism in an electrostatic actuator ~~according to Claim 1, comprising at least one electrostatic actuator which generates the electrostatic force parallel to a substrate surface, at least one slider which is displaced under the force from said electrostatic actuator, and at least one elastic beam fixed to the substrate supporting said slider,~~
~~wherein said elastic beam has a displaceable member which entirely or locally supports said slider,~~
~~wherein said displaceable member is easily displaced in a direction different from a displacement direction when said slider is subjected to the force in said displacement direction, and~~
wherein said elastic beam has a leaf spring structure in which one end of said elastic beam is fixed to said substrate in an inclined manner to the substrate surface, and the other end thereof is fixed to said slider, the entire elastic beam forms said displaceable member.
3. (Currently Amended) A slider displacement direction conversion mechanism in an electrostatic actuator ~~according to Claim 1, comprising at least one electrostatic actuator which generates the electrostatic force parallel to a substrate surface, at least one slider which is displaced under the force from said electrostatic actuator, and at least one elastic beam fixed to the substrate supporting said slider,~~
wherein said elastic beam has a displaceable member which entirely or locally

Application Serial No.: 09/970,939
Amendment dated February 20, 2004
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supports said slider,

wherein said displaceable member is easily displaced in a direction different from a displacement direction when said slider is subjected to the force in said displacement direction,

wherein said elastic beam has a strip-like projecting piece which is inclined to said substrate surface on both ends thereof, and

wherein said strip-like projecting pieces on both ends form said displaceable members, and said elastic beam is fixed to said substrate via said other strip-like projecting piece.

4. (Original) A slider displacement direction conversion mechanism in an electrostatic actuator according to Claim 3,

wherein said strip-like projecting piece is formed by providing a notched portion in a part of said elastic beam.

5. (Currently Amended) A slider displacement direction conversion mechanism in electrostatic actuator according to any one of Claims 1 2 to 3,

wherein displaceable members of said elastic beam are disposed so as to be easily displaced in a predetermined direction, and a plurality of elastic beams having said displaceable members are disposed so that each displaceable member is easily displaced in the same direction.

6. (Currently Amended) A slider displacement direction conversion mechanism in an electrostatic actuator according to any one of Claims 1 2 to 3,

wherein displaceable members of said elastic beams are disposed so as to be easily

Application Serial No.: 09/970,939
Amendment dated February 20, 2004
Reply to Office Action dated August 20, 2003

displaced in a predetermined direction, the elastic beams having said displaceable members are disposed so as to support forward and rear portions of said slider, and said forward and rear elastic beams are disposed so that each displaceable member is easily displaced in different directions.

7. (Currently Amended) A slider displacement direction conversion mechanism in electrostatic actuator according to any one of Claims 1 to 3,

wherein ~~said sliders comprise first and second at least one slider comprises two outer~~ sliders disposed parallel to ~~the substrate and one inner slider disposed between and parallel to~~ ~~the two outer sliders each other, said first slider is two outer sliders are supported by outer~~ ~~elastic beams said substrate via the displaceable member of said elastic beam fixed to said~~ ~~substrate, and said second slider is supported by said first slider via the displaceable member~~ ~~of the elastic beam the outer elastic beams having the displaceable member is fixed to the~~ ~~substrate and disposed outside the outer sliders, the inner slider placed between the outer~~ ~~sliders is supported by the outer sliders via inner elastic beams having the displaceable~~ ~~member, and~~

wherein driving forces in the reverse direction to each other are given from first and second electrostatic actuators to the ~~first and second sliders two outer sliders and the inner~~ ~~slider so that the displacement in the direction parallel to the substrate surface of said inner~~ ~~second slider is canceled, and the displacement in the upwardly perpendicular direction with~~ ~~respect to the substrate surface is increased.~~

8. (Currently Amended) A slider displacement direction conversion mechanism in an electrostatic actuator according to Claim 7,

Application Serial No.: 09/970,939
Amendment dated February 20, 2004
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~~wherein two of said first sliders are supported in parallel to each other by said substrate via the displaceable member of the outer elastic beam fixed to said substrate,~~
~~wherein one of said two second sliders is disposed between said two first sliders, and said second slider is respectively supported by said two first sliders via the displaceable member of the inner elastic beam,~~

wherein the outer sliders, the inner slider, the outer elastic beams and the inner elastic beams are symmetrical to an axis in an axial direction, said inner elastic beams have the displaceable members on an opposite side,

wherein one end of a pair of parallel disposed outer elastic beams is fixed to a connection plate via the displaceable member to connect the outer elastic beams to each other, one end of a pair of inner elastic beams is fixed to an inner wall of the outer slider via the displaceable member, another end of another pair of inner elastic beams is fixed to the inner slider via the displaceable member,

wherein the displaceable member of said outer elastic beam is a plate-like displaceable member inclined at a counterclockwise angle with respect to the substrate, and wherein the displaceable member of said inner elastic beam is a plate-like displaceable member inclined at a clockwise angle with respect to the substrate.

Application Serial No.: 09/970,939
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IN THE DRAWINGS

The attached sheet of drawings includes changes to Figs. 6 and 7. This sheet, which includes Figs. 6 and 7, replaces the original sheet including Figs. 6 and 7.

Attachment: Replacement Sheet